AMENDMENT TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS

1 – 5 (Previously Cancelled)

6. (Currently Amended) A method for generating a focused image of an object from an optical imaging system, the method comprising:

providing a plurality of images of the object, each image having a focus setting;

locating the object in at least one of the plurality of images to provide a known location of the object;

defining a plurality of image regions~~,~~ using the known ~~each of the plurality of image regions corresponding to a~~ location o~~n~~f the object;

measuring a sharpness score for each image region of at least two of the plurality of images;

determining a spatial weighting for the image regions using the sharpness score; and

computing a composite image of the object by combining each of the plurality of images using the spatial weighting.

7. (Previously Presented) The method of claim 6 wherein the step of defining a plurality of image regions further comprises:

determining a set of focus regions on the surface of the object; and

aligning at least one focus region in at least one of the plurality of images.

8. (Previously Presented) The method of claim 6 wherein the at least one of the plurality of image regions overlaps an adjacent image region using a fuzzy transition.

9. (Original) The method of claim 8 wherein the fuzzy transition is a function employing one of the set comprising sigmoid, gaussian and linear.

10. (Original) The method of claim 7 wherein the set of focus regions have a fuzzy transition.

11. (Original) The method of claim 10 wherein the fuzzy transition is a function employing one of the set comprising sigmoid, gaussian and linear.

12. (Previously Presented) The method of claim 6 wherein the plurality of image regions comprises a greyscale image map.

13. (Original) The method of claim 6 wherein the step of providing a plurality of images further comprises:

determining a coarse focus position.

14. (Original) The method of claim 6 wherein the step of providing a plurality of images further comprises:

determining a coarse focus position; and

acquiring a plurality of images at an incremental focus setting.

15. (Original) The method of claim 7 wherein the object is a fiber optic cable end face.

16. (Original) The method of claim 15 wherein the set of regions are annular.

17. (Previously Presented) The method of claim 6 wherein the step of measuring a sharpness score further comprises:

transforming each of the image regions of the at least two of the plurality of images so as to provide a plurality of spatial frequencies of the image regions;

measuring a density of high spatial frequencies; and

using the density of high spatial frequencies so as to provide a sharpness score.

18. (Previously Added) The method of claim 6 wherein at least one of the plurality of image regions corresponding to a location on the object is defined such that the entire region will be in focus in at least one focus setting.